

**REMARKS**

Claims 1 and 3-10 are pending in the application and presented for consideration. Upon entry of the accompanying amendment, Claims 1, 3-5 and 9 will be pending in the application. Claims 1 and 9 have been amended to include the features of claims 6-8 and claim 10, respectively, as well as to even more clearly point out the claimed features. Claims 6-8 and 10 are canceled accordingly. Additional support for the amendments to claim 1 may be found by drawings, in particular Figs. 2 and 3.

No new matter has been introduced. Entry of the amendments and reconsideration are respectfully requested.

**Rejections Under 35 U.S.C. §§ 102(b) and 103**

Claims 1, 3, 4, and 6-8 stand rejected under 35 U.S.C. 102(b) as being anticipated by French *et al.* (US 5,131,387) (“French”).

Claims 5, 9, and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over French in view of Bell (US 5,125,415) (“Bell”).

French is relied upon to disclose a moisture trap attached to a tube comprising a passage 66, an inlet port 34, a liquid absorption member 86 surrounding the passage, a gas permeable and liquid impermeable filter 102 for blocking the passage at a position farther than the liquid absorption member from the inlet port. The Office asserts that the device of French comprises an exhaust hole 48, and an extension 42 that isolates the absorption member and the filter from each other.

With regard to claim 5, the Office acknowledges that claim 5 differs from French in that the filter is made of a porous plastic resin material. Bell is relied upon to fill the gap, i.e., it is asserted that Bell teaches a cap having a filter made of a porous plastic resin material (Col 2, lines 57-58). The Office asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of French to have a filter formed of a porous plastic resin material as taught by Bell because it is allegedly well known in the art to use a porous plastic resin filter to allow the passage of gas and block the passage of fluid.

With regard to claim 9, the Office acknowledges that claim 9 differs from French in that the cap is attached to a liquid medicine reservoir having a pressure device. Bell teaches a syringe having a liquid medicine reservoir and a pressure device that allows the air to be purged from a syringe while preventing fluid from escaping. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of French to include a syringe as taught by Bell.

Applicants respectfully submit that the currently presented claims are patentable over French and Bell, alone or in combination, for the following reasons.

The claimed cap of the present application is to remove air from a medicine which is to be injected through a tube to a subject such as a patient, prior to the injection of the medicine into the subject. The cap is removed from the tube when the medicine is injected to the subject. As recited in the currently presented claims, the cap has a liquid absorption member which has a cylindrical and hollow structure and is disposed to surround an inner wall of a main body and a gas permeable and liquid impermeable filter which is separated from the liquid absorption

member. The cylindrical and hollow structure of the liquid absorption member of the claimed invention renders an effective removal of air from medicine contained in a tube.

By contrast, French teaches a moisture trap for use in a patient monitoring system. According to French, the trap is maintained to be connected to a sensor of the monitoring system and to the patient in order to remove moisture from exhalation of the patient. The hydrophilic column (86) of French does not have a hollow structure. The system of French does not have a tube which carries a liquid medicine and to which the moisture trap is connected. Moreover, French fails to teach a stepped extension which separates the gas permeable and liquid impermeable filter and the liquid absorption medium from each other, which renders the prevention of liquid (i.e., liquid medicine) from being contacted with the gas permeable and liquid impermeable filter. Also, French fails to teach that the other end of the absorption member abuts on a step of the stepped extension.

The spoke-like extension (42) taught by French cannot stop the liquid (or moisture) flowing from the oversaturated hydrophilic column (86), which consequently results in the blockage of the filter (102). The spoke-like extension (42), together with another spoke-like extension (56), forms a space to receive the filter (102), but cannot prevent liquid (moisture) from being contacted to the filter (102). Furthermore, the spoke-like extension (42) of French does not have a step.

Bell does not cure or fill the gap of French. Bell discloses a syringe tip cap which is fitted onto the luer lock of filled syringes to remove air from the syringes. The tip has a hydrophilic self-sealing filter, which passes air until it is blocked by absorbed blood (from the

filled syringes). The wetted filter forms a seal which prevents subsequent air contamination of the syringe contents. Bell also states its drawback that if the amount of luer blood contacting the filter prior to complete air passage is significant, it may cause the filter to expand and seal off before all the air is purged from the syringe (Col. 3, lines 31-35).

The claimed cap according to an embodiment of the present application has a structure which allows an effective removal of air present between a portion of the medicine liquid and the other portion of the medicine liquid, contained in a tube. That is, the liquid medicine flown into the passage of the cap is absorbed into the cylindrical, hollow liquid absorption medium and then the air flows into the passage, passes through the hollow of the liquid absorption medium, and flows out the exhaust hole. Thus, according to the claimed embodiment, the liquid absorption medium is disposed in front of the filter (gas permeable and liquid impermeable) in order to absorb liquid which flows into the passage before the air. The above-described structure is free of drawback (i.e., incomplete removal of air) of Bell.

Claim 9 of the present application recites, in addition to the cap structure of claim 1, a flow control device including a member that is connected to the cap and is to be removed according to the detachment of the cap from the tube when the liquid medicine is supplied to a subject. Neither of French nor Bell teaches such a flow control device which can be removed together with the cap from the tube.

Accordingly, it is clear that the rejections are not sustainable in light of the amendments to claims 1 and 9 and Applicants respectfully request the rejections be withdrawn.

AMENDMENT UNDER 37 C.F.R. § 1.111  
Application No.: 10/523,993

Attorney Docket No.: Q86186

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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